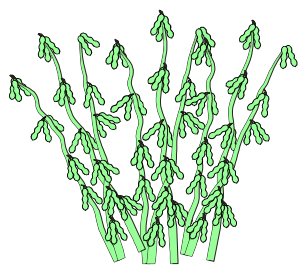# INTRODUCED SPECIES

Most plants and vertebrate animal introductions have been intentional, whereas most invertebrate animal and microbe introductions have been accidental. The past 40 years have greatly increased the rate and risk of biotic invaders due to human population increases, rapid transportation and the alteration of the natural environment. The potential for unintentional introductions is also increased due to the fact that more goods and materials are traded among nations than ever before. The primary transfer routes for introduced species associated with shipping are ballast water and cargo.

Ballast water may contain foreign plants, mollusks, arthropods, and annelids. These species can displace native species and cause significant environmental and/or economic impact. Ballast water contaminated with bacteria, parasites, or viruses can affect native populations of aquatic species either by causing disease in the organism itself or in the consumer (i.e.contaminated oysters causing disease in human population).

Cargo can contain a variety of unwanted "hitch hikers" including rats and mice, insects, mites, reptiles, amphibians, soil microbes, fungus, ticks and fleas. However, these undesirables are usually transferred via the importation of plants, animals, and food products and are not likely to be transported via containers.
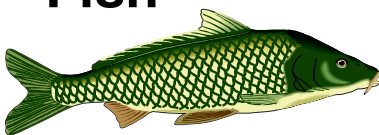
The species presented below have been introduced to the United States or U.S. Territories.
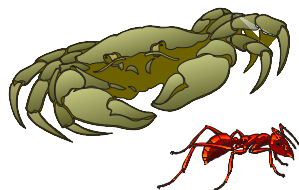
Exotic Aquatic Plant Species

Hydrilla (Hydrilla verticillata)
Water Hyancinth (Eichornia crassipes)
Water Lettuce (Pistia straiotes)
Giant Salvina (Salvinia molesta)
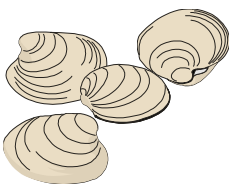Eurasian Water-milfoil (Myriophyllum spicatum)

Fish

Grass Carp (Ctenopharyngodon idella)
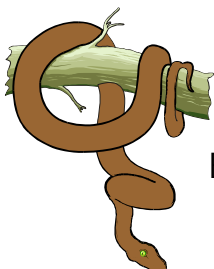Common Carp (Cyprinus carpio)

Anthropods and Annelids

Balsam wooly adelgid (Adeles piceae)
Red imported fire ant (Solenopsis)
European green crab (Carcinus Maenas)

Mollusks

Zebra Mussel (Dreissena polymorpha)
Asian Clam (Corbicula flumina)
Shipworm (Teredo navalis)

Amphibians and Reptiles

Brown tree snake (Boiga irregularis)